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entering German ports, the regulations existing in the various Federal maritime States remain in force for the present.

Sec. 32. The responsibility for carrying out preventive measures in the following cases rests with the military and naval authorities, respectively: (1) So far as soldiers and sailors in active service are concerned; (2) persons employed in army buildings or in the offices of the imperial navy; (3) troops on the march, and (4) with respect to all lands and establishments used by the military and naval authorities, respectively.

Sec. 33. The responsibility for carrying our protective measures against plague in the railway and telegraphic service rests exclusively with the imperial authorities.

Sec. 34. The authorities of the Federal States are bound to render mutual assistance in combating plague.

Sec. 35. The conservation of plague cultures and scientific experiments with the same are only permissible with the approval of the central authorities.

Sec. 36. The indemnification of persons suffering losses resulting from disinfection measures, etc., is governed by sections 28 to 34 of the law.

Exhibit 6.—Report to be rendered weekly to imperial health officer of the plague cases which occurred during the period from —— to ——, 190—, suspected plague cases not to be included.

1. Name of town and district.
2. Number of inhabitants last census.
3. Recent cases.
4. Of those who have arrived from other towns already ill or within ten days of illness. Of whom, within the last ten days before the illness or already ill, arrived from other towns.
5. Died.
6. Remarks, especially the date of outbreak in the district and whence the persons mentioned in paragraph 4 came.

Exhibit 4—Blank for reporting a plague case.—Place where the case occurred —— ——. Dwelling (street, house number, floor) —— ——.

Patients: Family name —— ——. Sex: Male or female (respective word to be underlined) —— ——. Age ——. Profession or trade ——. Place where employed or carrying on business —— ——.

Day when taken ill —— ——. Day of death —— ——. Remarks (especially whether recently arrived, when and from what place) —— ——.

Exhibit 1.—Directions for obtaining material for examination regarding plague.

Exhibit 2.—Instruction regarding plague (for medical men).

Exhibit 3.—Instruction regarding plague (for laymen).

Exhibit 4.—Blank to be filled out when reporting a case of plague.

Exhibit 5.—List of plague cases.

Exhibit 6.—Form for weekly reports to imperial health office.

Exhibit 7.—Directions for the bacteriological examination of suspected-plague cases.

Exhibit 8.—Directions for disinfection.

Exhibit 9.—Regulations governing traffic on the railroads in times of plague.

Exhibit 10.—Regulations for making experiments with plague cultures.

Bacteriological examination and diagnosis of plague.—Extract from article by Dr. Balfour Stewart, Plague Research Laboratory, Bombay.

BERLIN, GERMANY, *September 30, 1902.*

SIR: I have the honor to transmit, under separate cover, an article by Dr. Overbeck and Professor Kossel of the imperial health office in Berlin, on the bacteriological examination and diagnosis of plague.

In their elaborate treatise the authors make reference to the following works, among others:

Bitter.—Report of the Commission sent by the Egyptian Government to Bombay to Study Plague.

Hankin and B. H. F. Leumann.—A Method of Rapidly Identifying the Microbe of Bubonic Plague.

Hewlett, R. T.—The Bacillus of Bubonic Plague. (Transactions of the British Institute for Preventive Medicine; first series, p. 137.)

Kitasato.—Preliminary Notice of the Bacillus of Bubonic Plague.

Stewart, C. B.—The Bacteriological Diagnosis of Plague. (British Medical Journal, No. 2021.)

In view of the frequent citations by the authors, of the latter article, it may not be inappropriate to give here a brief synopsis of the same. Dr. Balfour Stewart formerly attached to the plague research laboratory at Bombay, writes as follows:

The following methods are those adopted at the plague research laboratory for diagnosing plague in man or animals, and for testing a plague culture. Naturally, in Bombay we had to do with recent cultures, and the following remarks apply to such. A plague culture grown for a long time on artificial media does not seem to give the same results; at any rate, a culture of plague which had been kept for a long time in a laboratory, and which was given me to examine, did not grow typically in broth.

Media.—Only two kinds of media are used—agar and broth; it is found impossible to work with gelatin in India on account of the high temperature. Ordinary agar slant tubes are allowed to dry. Should they be required for use soon after they are made, it is best to place them for a few days in a drying bottle, with quicklime at the bottom, otherwise they may be dried by leaving them on their sides in a dark room for a few weeks. If plate cultures are made it is better to prepare the plate, and let it dry and make a smear culture.

Broth.—A special peptone solution and infusion of meat made out of goat's flesh is used on account of native religious prejudice against beef and commercial peptone, but ordinary broth made of beef infusion plus 1 per cent peptone plus .5 per cent salt, does just as well or better.

The broth need not be neutralized unless very acid. I have often found the plague bacillus grow better in broth made without any addition of alkali, the reaction to blue litmus paper being a slight tinge of red. As such broth generally gives a precipitate after sterilization and requires to be filtered and sterilized again, it is better for practical purposes to render the broth slightly alkalin, the less the better, and not more than is given by .2 gram per cent of caustic soda added to the broth after being made neutral. About 100 c. c. should be put into globular flasks of about 200 c. c. capacity, and sterilized at a slightly lower temperature than that at which the broth was originally heated; if this is done, no further precipitate will come down.

Source of the plague microbe.—The plague microbe is found in the blood shortly before a fatal termination of a case of plague, so the specimen should be taken shortly before or soon after death.

The sputum of a case of pulmonary plague contains the bacilli. If the bacillus is to be sought for in the bubo, it is better to make a small incision in the skin, and push a small sterilized glass pipette into the gland, and suck up a drop or two of the juice. This should be done before suppuration has commenced.

After some remarks as to the use of an incubator, Dr. Balfour Stewart continues:

Growth on agar.—The colonies appear in twenty-four or forty-eight hours. If numerous, they appear to the naked eye as small round points, colorless and translucent. Under Zeiss (obj. A), they are translucent with slightly greenish tinge, granular, and have slightly ragged edges.

A plague colony slips about on the surface of the agar when touched with a platinum wire.

If a dried agar slant tube is inseminated by introducing .1 to .2 c. c. of a broth culture by means of a long, thin, glass pipette, and if the culture is smeared evenly over the surface with a thin glass rod or with the end of the pipette (care being taken not to dig into the agar), the so-called "ground-glass appearance" is seen after one or two days' incubation. The layer of growth should be viewed from underneath through the substance of the agar with the light coming from opposite, the eye being almost level with the slanting surface of the agar tube held about a foot off. The layer of growth looks like bright ground glass, or like the back of a looking-glass.

This "ground-glass" appearance was first shown by Haffkine. It is a very useful method of testing the purity of a culture known to be plague, because a strange colony is generally detected at a glance.

Broth.—Haffkine considers the stalactite growth of plague in broth to be characteristic of the microbe. He puts a drop or two of cocoanut oil or ghee (native clarified butter) in the flasks before they are sterilized. The oil globules form a thin, broken film on the surface of the broth. After inoculation the flask must be incubated on a firm shelf or table. In three to six days numerous thin threads of growth are seen hanging down from the surface into the otherwise clear broth. If the flask is gently shaken the stalactites fall down to the bottom like a fall of snow. After a time the broth becomes clear again, and in a day or two another lot of stalactites will be found hanging from the surface.

In making broth cultures the writer always inseminated the flasks by means of a thin drawn-out glass rod long enough to project above the mouth of the flask; one end is held in the fingers, and the rod passed 7 times slowly through the flame. The other sterilized end is drawn over the culture, the rod is then passed into the flask between the cotton wool plug and the glass till the end touches the bottom, the unsterilized part of the rod projecting above the plug.

The curious form of growth on the surface of the glass seems to be characteristic of the plague microbe; it proves a useful test because some idea can be formed before the stalactites have had time to grow.

Microscopic examination.—The plague microbe stains readily with aniline dyes, but not by Gram's method. The bipolar staining in stained specimens when the ends are found to be deeper stained than the center is by no means a constant phenomenon and can not be relied on for diagnosis. Mr. Watkins-Pitchford (Report on antiseptics, Bombay, April 22, 1898) considers it due to a greater collection or condensation of the protoplasm in these regions. He notes that the spots are readily visible in the living and unstained specimens, so they can not be due to staining.

The bacillus is polymorphic; it is sometimes seen as a very short bacillus, almost like a coccus or diplococcus, at other times as a short stumpy bacillus with rounded ends.

On page 134 of the article by Dr. Overbeck and Professor Kossel will be found a bibliography of the works referred to by the learned physicians, including, among others, works by Professors Koch, Gaffky, Klein, Kolle, Weichelbaum, Abel, etc., reference to some of which will be made in a supplemental report on this subject.

Respectfully, FRANK H. MASON,
United States Consul-General.

The SURGEON-GENERAL.

[Reports to the Surgeon-General Public Health and Marine-Hospital Service.]

ALASKA.

Sanitary conditions among natives in vicinity of Dutch Harbor—Prevalence of tuberculosis.

DUTCH HARBOR, ALASKA, *September 16, 1902.*

SIR: I have the honor to report as follows on the general sanitary condition and health of the natives in this immediate vicinity: As far as my observation has extended, I would say that tuberculosis, in some form, is the most prevalent disease. At the Jessie Lee Home, an institution conducted by the missionary society of the Methodist Episcopal Church, there are about 35 native and half-breed children. Their ages range from 18 months to 18 or 20 years. Of this number, fully one-half are afflicted with tuberculosis in some form. The most prevalent form is glandular tuberculosis, especially of the cervical and axillary glands. I have also seen several cases of tuberculosis of the osseous system, including the vertebræ and ulna, and 1 case of joint tuberculosis, including the shoulder joint. Pulmonary tuberculosis is also quite frequent, there having been 3 deaths from that disease in the village of Unalaska since June 1, 1902, out of a total population of 220. There are several cases of syphilis in the village, and 1 case has the saddle nose deformity quite well marked. Pneumonia is also quite frequent. The conditions under which the natives live are not hygienic, to say the least, although I am told that they live much better than the natives in some other portions of the Aleutian Islands.

There have been no cases of epidemic or quarantinable disease among the natives of this locality, nor, as far as I can ascertain, among the natives of the other islands of the group this summer.

The vital statistics of the village of Unalaska, Unalaska Island, in my